

# Low Impact Design (LID)

## Stormwater Retrofit FACTSHEET:

### Forest Estates Neighborhood

#### Wheaton Branch Subwatershed Facts:

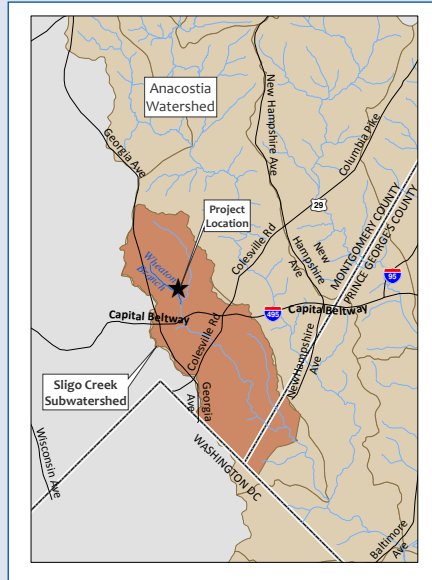
Wheaton Branch is a tributary of Sligo Creek and the Northwest Branch of the Anacostia River. The Wheaton Branch subwatershed is approximately 824 acres (1.3 square miles) in size and the surface is 40% impervious. An existing multi-cell pond/marsh system is located immediately upstream of the project limits.

#### Property Ownership:

Montgomery County

#### Restoration Goals:

Maximize stormwater management to improve conditions in the Wheaton Branch tributary and Sligo Creek, improve water quality treatment, encourage infiltration of runoff from parking lots, roadways and other impervious surfaces, and to fulfill the requirements in the County's Municipal Separate Storm Sewer System (MS4) permit.



*Sligo Creek is a tributary of the Northwest Branch of the Anacostia River.*

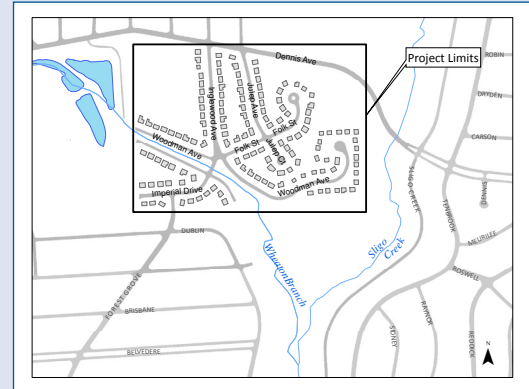
#### Potential Impervious Area Treated:

10.13 acres

#### Project Facts:

Total Stormwater Management LID features proposed: 40

- Bioretention Facilities
- Rain Gardens
- Tree Box Filters
- Pervious Pavement/Sidewalks



*Forest Estates Neighborhood*



*Existing Conditions along Folk Street.*

**Project Status as of March 2011:**  
Planning Stage

**Estimated Start of Construction:**  
Summer 2011

#### Project Selection

A study was conducted to develop an inventory and prioritize Low Impact Design (LID) stormwater runoff retrofit opportunities within the Forest Estates neighborhood. The study identified and prioritized forty sites based on the feasibility to provide treatment of runoff from impervious surfaces such as roadways, sidewalks and driveways. Criteria evaluated for each site

included existing drainage patterns, site access, potential utility and tree impacts, soil types relative to infiltration rates and site visibility. The County plans to install proposed LID features concurrently with Montgomery County Department of Transportation's (MDOT) roadway maintenance and/or rehabilitation work.

#### Pre-Retrofit Conditions

Much of the Anacostia Watershed, including the Sligo Creek Subwatershed, has been developed prior to regulations for stormwater management. The project area contains a high level of impervious surfaces (i.e. roads, rooftops, etc.) that forces rain water to run off untreated and uncontrolled directly into storm drain systems. Untreated runoff carries pollutants such as

automobile oils, fertilizers, sediment, and trash into downstream waterways, degrading the water quality and natural habitat. Impervious surfaces also prevent rain water from infiltrating into the ground, which naturally filters pollutants.

#### Proposed Retrofit Actions

In an effort to reduce impacts from uncontrolled and untreated runoff, the

County is proposing forty new stormwater management Low Impact Development (LID) facilities: bioretention facilities, rain gardens, tree box filters, pavement removal and pervious sidewalk throughout the neighborhood.

Bioretention facilities and/or tree box filters are proposed in areas where an existing storm drain inlet or pipe is in close proximity. Both types of facilities capture and filter runoff through layers of planting soil, sand, and gravel prior to entering an underdrain system and ultimately into the adjacent stream channel. Tree box filters were utilized where available space is limited, utility or vegetation conflicts exist, and/or to protect bus stops.

Rain garden facilities are similar to bioretention facilities; however, they do not have an underdrain system. The filtered runoff infiltrates and recharges the groundwater supply. These facilities are proposed in areas where storm drains are not present.

Sidewalk replacement with pervious or permeable pavement is also proposed. Pervious pavement acts similarly to rain gardens; runoff infiltrates through the sidewalk surface and subbase, recharging the groundwater supply. Installation of pervious sidewalks will be coordinated with Montgomery County

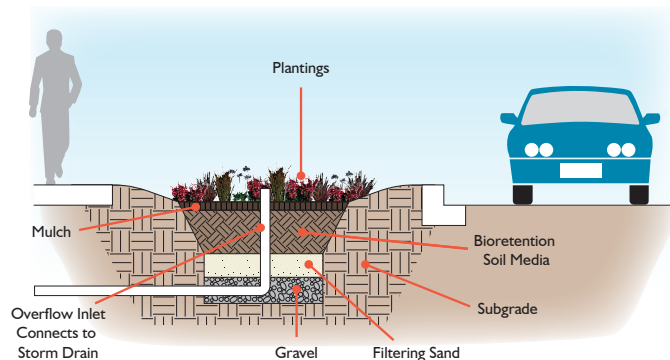
DOT's scheduled sidewalk improvements.

The proposed LID features will provide environmental benefits, improve the aesthetics of the properties where reasonably possible, and provide opportunities for community education.

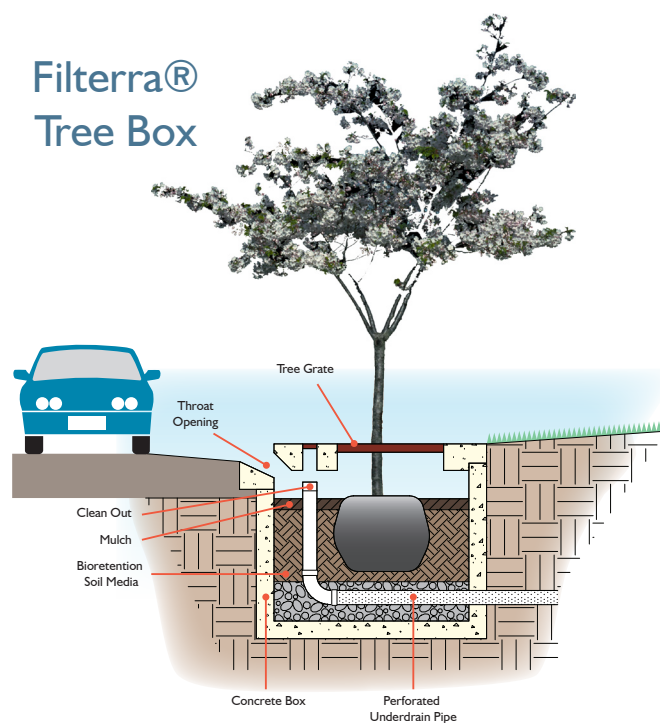
### RainScapes Program

The RainScapes Program provides funding and technical assistance for County property owners who volunteer to install environmentally friendly landscaping practices in their yards. RainScapes techniques are a variety of landscaping features that help the soil to capture and soak in rainfall, while providing attractive landscaping with multiple benefits, including reducing the amount of stormwater pollutants from residential property. DEP is evaluating properties for potential project sites, and is planning neighborhood walks and workshops for residents to sign up to participate in the program. Properties with suitable locations for rain gardens, conservation landscaping, tree canopy, and other similar runoff reduction projects will be eligible to sign up to have the County install a RainScapes project. Specific project information will be available in the Spring of 2011, and more information can be obtained from the RainScapes website at [www.montgomerycountymd.gov/rainscapes](http://www.montgomerycountymd.gov/rainscapes).

## Bioretention



## Filterra® Tree Box



*An Example of a Rain Garden*

### For more information:



Jennifer St. John, 240-777-7740, [Jennifer.St.John@montgomerycountymd.gov](mailto:Jennifer.St.John@montgomerycountymd.gov)  
 Department of Environmental Protection / Division of Watershed Management  
 255 Rockville Pike, Suite 120, Rockville, MD 20850  
[www.montgomerycountymd.gov/dep](http://www.montgomerycountymd.gov/dep)